INSTRUCTIONS FOR TABLE 3

EXPOSURE POINT CONCENTRATION SUMMARY

PURPOSE OF THE TABLE: • To provide the Exposure Point Concentrations (EPCs) for measured and modeled values • To provide statistical information on the derivation of the EPCs.	
INFORMATION DOCUMENTED: • Statistical information which was used to calculate the EPCs for chemicals and radionuclides detected in each Medium • Exposure Point Concentrations (RME and/or CT) • The statistics which were used to make the determinations as well as the rationale for the selection of the statistics for each chemical or radionuclide (i.e., discuss statistical derivation of measured data or approach for modeled data).	
TABLE NUMBERING AND SUMMARY BOX INSTRUCTIONS: • Follow the instructions below to create separate sets of Table 3 for RME and CT when appropriate. • Complete one copy of Table 3 for each unique combination of the following three fields that will be quantitatively evaluated: Scenario Timeframe, Medium, and Exposure Medium. • Enter each combination of these three fields in the Summary Box in the upper left corner of the table. • Number each table uniquely, beginning with 3.1 and ending with 3.n, where "n" represents the total number of combinations of the three key fields. Add the extension .RME or .CT to the table number to indicate reasonable maximum exposure or central tendency. • Add the line "Reasonable Maximum Exposure" or "Central Tendency" to the table title.	***It is possible that some tables may contain the same data associated with different descriptions in the Summary Box in the upper left corner.*** ***Separate tables may be necessary to ensure transparency in data presentation for each Exposure Pathway. Replication of information is readily accomplished using spreadsheet software.*** ***Consult the EPA risk assessor for alternatives (e.g., footnotes) to preparing multiple tables with the same data.***

INSTRUCTIONS FOR TABLE 3

EXPOSURE POINT CONCENTRATION SUMMARY (continued)

GENERAL NOTES/INSTRUCTIONS FOR THIS TABLE: • Attach supporting documentation regarding how the EPC was calculated. • Attach an example calculation so the methodology used to develop EPCs is clear to a reviewer. • Attach supporting information regarding how the concentration term was selected. • Consult the EPA risk assessor concerning use of decimals or scientific notation for data. • For certain media, all columns will not be completed.	***This information should be of sufficient detail that a reviewer can check and verify the calculations which were performed and obtain the same results as listed in this table.*** ***It is possible that the 95% UCL may not need to be calculated, for example, if only one data point is being considered.*** ***As another example, in some regions, the arithmetic average of concentrations measured from the center of the plume is used as the RME. In this case, the 95% UCL column does not need to be completed.***
HOW TO COMPLETE/INTERPRET THE TABLE	
SUMMARY BOX IN UPPER LEFT CORNER	
Row 1 - Scenario Timeframe	
Definition: • The time period (current and/or future) being considered for the exposure pathway.	
Instructions: • Choose from the picklist to the right.	***Current*** ***Future*** ***Current/Future*** ***Not Documented***
Row 2 - Medium	
Definition: • The substance (e.g., air, water, soil) that is a potential source of contaminants in the Exposure Medium. (The Medium will sometimes = the Exposure Medium.) Usually, the Medium is that targeted for possible remediation.	

INSTRUCTIONS FOR TABLE 3

EXPOSURE POINT CONCENTRATION SUMMARY (continued)

Instructions: • Choose from the picklist to the right.	***Groundwater*** ***Leachate*** ***Sediment*** ***Sludge*** ***Soil*** ***Surface Water*** ***Debris*** ***Other*** ***Liquid Waste*** ***Solid Waste*** ***Air*** ***Surface Soil*** ***Subsurface Soil***

INSTRUCTIONS FOR TABLE 3

EXPOSURE POINT CONCENTRATION SUMMARY (continued)

Row 3 - Exposure Medium	
Definition: • The contaminated environmental medium to which an individual may be exposed. Includes the transfer of contaminants from one medium to another. ***For example:*** ***1) Contaminants in Groundwater (the Medium) remain in Groundwater (the Exposure Medium) and are available for exposure to receptors.*** ***2) Contaminants in Groundwater (the Medium) may be transferred to Air (the Exposure Medium) and are available for exposure to receptors.*** ***3) Contaminants in Sediment (the Medium) may be transferred to Fish Tissue (the Exposure Medium) and are available for exposure to receptors.***	
Instructions: • Choose from the picklist to the right.	***Groundwater*** ***Leachate*** ***Sediment*** ***Sludge*** ***Soil*** ***Surface Water*** ***Debris*** ***Other*** ***Liquid Waste*** ***Solid Waste*** ***Air*** ***Plant Tissue*** ***Animal Tissue*** ***Fish Tissue*** ***Spring Water*** ***Surface Soil*** ***Subsurface Soil*** ***Particulates*** ***Vapors***

INSTRUCTIONS FOR TABLE 3

EXPOSURE POINT CONCENTRATION SUMMARY (continued)

BODY OF THE TABLE	
Column 1 - Exposure Point	
Definition: • An exact location of potential contact between a person and a chemical or radionuclide within an Exposure Medium. ***For example:*** ***1) Contaminants are in Groundwater (the Medium and the Exposure Medium) and exposure to Aquifer 1 - Tap Water (the Exposure Point) is evaluated.*** ***2) Contaminants in Groundwater (the Medium) may be transferred to Air (the Exposure Medium) and exposure to Aquifer 1 - Water Vapors at Showerhead (the Exposure Point) is evaluated.*** ***3) Contaminants in Sediment (the Medium) may be transferred to Fish Tissue (the Exposure Medium) and Trout from Dean's Creek (the Exposure Point) is evaluated.***	
Instructions: • Provide the information as text in the table.	***Exposure Point should be defined the same way as was done in Planning Table 1.***
Column 2 - Chemical of Potential Concern	
Definition: • A chemical or radionuclide that is potentially site-related, with data of sufficient quality, that has been retained for quantitative analysis as a result of the screening documented in Table 2.	
Instructions: • Enter the names of the chemicals which were selected as COPCs from Table 2.	***Chemicals can be grouped in the order that the risk assessor prefers. Class descriptions (e.g., PAHs, VOCs, inorganics) can be included as a row before a group of chemicals.***
Column 3 - Units	
Definition: • The concentration units for each chemical and radionuclide detected.	

INSTRUCTIONS FOR TABLE 3

EXPOSURE POINT
CONCENTRATION SUMMARY (continued)

Instructions: • Enter units for each chemical and radionuclide. Units may vary among matrices/media.	***Consult with the EPA risk assessor to determine if there is a preference regarding the units used for different matrices (e.g., mg/kg for soil, µg/L for groundwater). Choices include:*** ***mg/l µg/l ng/l pg/l % ppm ppb ppt g/kg mg/kg µg/kg ng/kg µg/g mg/m³ µg/m³ fibers/l fibers/m³ fibers/kg lbs/day µg/100cm² mg/cm² µRem/hr Rem/yr pCi/g pCi/kg pCi/m³ pCi/l pCi/m²/sec Other Not Documented***
Column 4 - Arithmetic Mean	
Definition: • The arithmetic average of detected concentrations. This is the sum of the data divided by the number of data points.	
Instructions: • Enter the arithmetic average of detected concentrations.	***For duplicate samples, multiple rounds of sampling, and other data evaluation questions, consult the EPA risk assessor.***
Column 5 - 95% UCL (Distribution)	
Definition: • The statistic for the 95% Upper Confidence Limit on the arithmetic mean, and the type of distribution.	***Consult National guidance (Supplemental Guidance to RAGS: Calculating the Concentration Term, OSWER Directive: 9285.7-08I, May 1992 or most recent updates) and the EPA risk assessor for calculating this term.***
Instructions: • Enter the 95% UCL for each COPC. • Indicate the distribution of the 95% UCL with (N) or (T) after the value as follows: N is Normal, T is Transformed (lognormal), NP is Nonparametric, O is Other. Define the codes describing the type of distribution in a footnote. • Specify any assumptions made in calculating the term in footnotes on this table. • Supporting information should be provided in the risk assessment.	***For example, for non-detects, ½ the sample quantitation limit is sometimes used as a proxy concentration. For duplicate sample results, the average value is sometimes used in the calculation.***

INSTRUCTIONS FOR TABLE 3

EXPOSURE POINT CONCENTRATION SUMMARY (continued)

Column 6 - Maximum Concentration (Qualifier)	
Definition: • Maximum Concentration - The highest detected concentration of the chemical or radionuclide in the Medium at the current Exposure Point which is above the sample quantitation limit. • Maximum Qualifier - The alpha-numeric code assigned to the concentration value by the analytical chemist during data validation for the maximum concentration value.	
Instructions: • Enter the maximum concentration value. • Enter the qualifier associated with the maximum concentration.	***Provide the definitions of each qualifier in the table footnotes or in supporting information.***
Column 7 - Exposure Point Concentration Value	
Definition: • The EPC, based on either a statistical derivation of measured data or modeled data, that represents an estimate of the chemical or radionuclide concentration available from a particular Medium or route of exposure. This EPC value will be used to quantify potential cancer risks and non-cancer hazards. ***For example,*** ***the EPC value may be statistically derived by calculating the 95% UCL of measured groundwater contaminant concentrations from multiple residential wells. Alternatively, the EPC value may be selected as a single measured value, if one data point is used to calculate the risk for each residential well individually. In some cases, the EPC value may be a modeled value (e.g., if upgradient groundwater contaminant concentrations are used to model groundwater concentrations, a downgradient exposure point, or if sediment concentrations are used to model fish tissue concentrations)***	***The EPC Value may be calculated, measured, or modeled.***
Instructions: • Enter the value in the column. • When using modeled data, enter the Exposure Point, COPC, EPC Value, and EPC Rationale, and include a reference to the location of backup information that show how the data were modeled in the risk assessment document.	***Consult the EPA risk assessor concerning how to determine this value.***
Column 8 - Exposure Point Concentration Units	

INSTRUCTIONS FOR TABLE 3

EXPOSURE POINT CONCENTRATION SUMMARY (continued)

Definition: • The units of the data being used to calculate the EPC.	
Instructions: • Enter the units for the data being used to calculate the EPC.	***Consult the EPA risk assessor for preferences for different media (e.g., ug/L for groundwater; mg/kg for soil).***
Column 9 - Exposure Point Concentration Statistic	
Definition: • The statistic selected to represent the EPC Value based on the distribution of the data, number of data points, etc., and consultation with the EPA risk assessor.	***Often, this is 95% UCL of the log-transformed data.***
Instructions: • Enter the statistic used by choosing from the picklist to the right. • Define the codes used for the EPC Statistic column in table footnotes. If the statistic used is not on the picklist, enter an abbreviation in Column 9 and provide a description of the statistic in the footnotes of the table.	***Max (Maximum)*** ***95% UCL - N (95% UCL of Normal Data)*** ***95% UCL- T (95% UCL of Log-transformed Data)*** ***95% UCL - NP (Mean of Nonparametric Data)*** ***Mean - N (Mean of Normal Data)*** ***Mean - T (Mean of Log-transformed Data)*** ***Mean - NP (Mean of Nonparametric Data)***
Column 10 - Exposure Point Concentration Rationale	
Definition: • The reason the cited statistic was used to represent the EPC.	
Instructions: • Enter the rationale for the selection. Footnotes can be used.	